

**PowerPoint
Presentations for
PSYCHOLOGY
CORE CONCEPTS
Sixth Edition**

**Philip G. Zimbardo
Robert L. Johnson
Vivian McCann**

**Prepared by
Beth M. Schwartz**

This multimedia product and its contents are protected under copyright law. The following are prohibited by law: any public performance or display, including transmission of any image over a network; preparation of any derivative work, including the extraction, in whole or part, of any images; any rental, lease, or lending of the program. ISBN: 0-205-42429-7

Copyright © Allyn and Bacon 2009

Chapter 4



Memory 📌

This multimedia product and its contents are protected under copyright law. The following are prohibited by law: any public performance or display, including transmission of any image over a network; preparation of any derivative work, including the extraction, in whole or part, of any images; any rental, lease, or lending of the program. ISBN: 0-205-42429-7

Copyright © Allyn and Bacon 2009



What is Memory?



Human memory is an information processing system that works constructively to encode, store, and retrieve information

3

Copyright © Allyn and Bacon 2009



What is Memory?

Memory –

A cognitive system that first processes, encodes, and stores the information we learn and later allows us to retrieve



Copyright © Allyn and Bacon 2009

Memory's Three Basic Tasks

Encoding

Storage

Access and Retrieval

5

Copyright © Allyn and Bacon 2009

Memory's Three Basic Functions

Encoding

Storage

Access and Retrieval

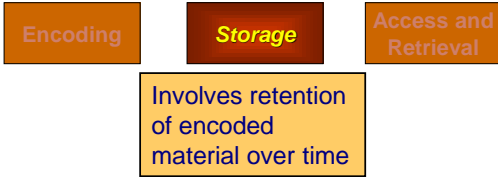
Involves modification of information to fit the preferred format of the memory system

Elaboration – Type of encoding in which meaning is added to information in working memory so that it may be more easily stored and retrieved

6

Copyright © Allyn and Bacon 2009

Memory's Three Basic Functions



7

Copyright © Allyn and Bacon 2009

Memory's Three Basic Functions



8

Copyright © Allyn and Bacon 2009

Key Question



How Do We Form Memories?



Each of the three memory stages encodes and stores memories in a different way, but they work together to transform sensory experience into a lasting record that has a pattern of meaning

9

Copyright © Allyn and Bacon 2009

The First Stage: Sensory Memory

The actual capacity of sensory memory can be twelve or more items

All but three or four items disappear before they can enter

There is a separate *sensory register* for each sense

13

Copyright © Allyn and Bacon 2009

The First Stage: Sensory Memory

Psychologists believe that, in this stage, memory images take the form of neural activity in the sense organs

14

Copyright © Allyn and Bacon 2009

The Three Stages of Memory



Preserves recently perceived events or experiences for less than a minute without rehearsal, also called short-term memory or STM

15

Copyright © Allyn and Bacon 2009

The Second Stage: Working Memory

A mental work space where we sort and encode information before adding it to more permanent storage

Information is stored for about 20 seconds

Rehearsal leads to longer duration

Capacity of the “magic number” 7

16

Copyright © Allyn and Bacon 2009

Encoding and Storage in Working Memory

Chunking –

Organizing pieces of information into a smaller number of meaningful units

Maintenance rehearsal –

Process in which information is repeated or reviewed to keep it from fading while in working memory



17

Copyright © Allyn and Bacon 2009

Encoding and Storage in Working Memory

Elaborative rehearsal –

Process in which information is actively reviewed and related to information already in LTM

18

Copyright © Allyn and Bacon 2009

The Second Stage: Working Memory

Working memory consists of:

A central executive-directs attention to input

A phonological loop-temporarily stores sounds

The sketch pad-stores and manipulates visual images

Episodic buffer-helps to remember events

Semantic buffer-helps attach meaning to words

19

Copyright © Allyn and Bacon 2009

Encoding and Storage in Working Memory

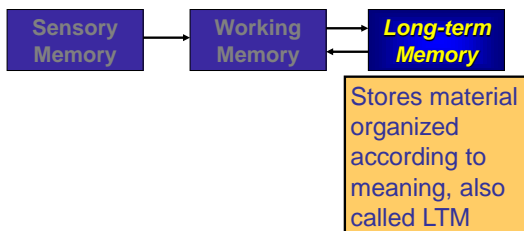
Levels-of-processing theory –

Explanation for the fact that information that is more thoroughly connected to meaningful terms in LTM will be better remembered

20

Copyright © Allyn and Bacon 2009

The Three Stages of Memory



21

Copyright © Allyn and Bacon 2009

The Third Stage: Long-Term Memory

Procedural memory –

Division of LTM that stores memories for how things are done

Declarative memory –

Division of LTM that stores explicit information
(also known as fact memory)

22

Copyright © Allyn and Bacon 2009

The Third Stage: Long-Term Memory

Episodic memory –

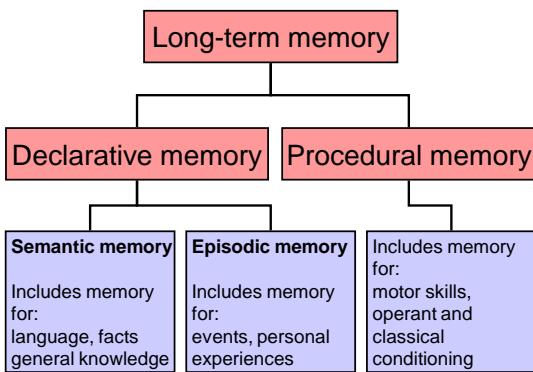
Subdivision of declarative memory that stores memories for personal events, or “episodes”

Semantic memory –

Subdivision of declarative memory that stores general knowledge, including meanings of words and concepts

23

Copyright © Allyn and Bacon 2009



24

Copyright © Allyn and Bacon 2009

The Biological Basis of Long-Term Memory

Engram –

The physical trace of memory

Anterograde amnesia –

Inability to form memories for new information

Retrograde amnesia –

Inability to remember information previously stored in memory

Neuroscience and long-term memory –

Consolidation

Posttraumatic stress disorder (PTSD)

25

Copyright © Allyn and Bacon 2009



How Do We Retrieve Memories?

CORE CONCEPT

Whether memories are implicit or explicit, successful retrieval depends on how they were encoded and how they are cued

26

Copyright © Allyn and Bacon 2009



How Do We Retrieve Memories?

Implicit memory –

Memory that was not deliberately learned or of which you have no conscious awareness

Explicit memory –

Memory that has been processed with attention and can be consciously recalled

27

Copyright © Allyn and Bacon 2009

Retrieval Cues



Priming –

Procedure of providing cues that stimulate memories without awareness of the connection between the cue and the retrieved memory

28

Copyright © Allyn and Bacon 2009

Recall and Recognition

Recall –

Technique for retrieving explicit memories in which one must reproduce previously presented information

Recognition –

Technique for retrieving explicit memories in which one must identify present stimuli as having been previously presented

29

Copyright © Allyn and Bacon 2009

Other Factors Affecting Retrieval

Encoding specificity principle –

The more closely the retrieval clues match the form in which the information was encoded, the better the information will be remembered

30

Copyright © Allyn and Bacon 2009

Other Factors Affecting Retrieval

Mood-congruent memory –

A happy mood is likely to trigger happy memories, depression perpetuates itself through biased retrieval of depressing memories

31

Copyright © Allyn and Bacon 2009

Other Factors Affecting Retrieval

Prospective memory –

Remembering to remember

Continuous monitoring –

Trying to keep intended actions in mind

Tip-of-the-Tongue phenomenon (TOT) –

Inability to remember with the sense you have the information in memory



32

Copyright © Allyn and Bacon 2009

Key Question



Why Does Memory Sometimes Fail Us?

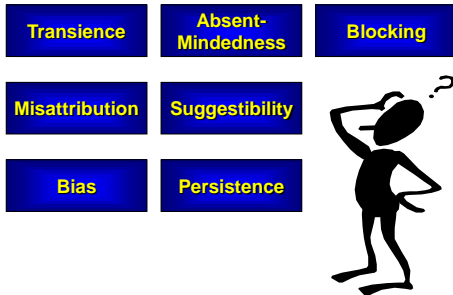


Most of our memory problems arise from memory's "seven sins" – which are really by-products of otherwise adaptive features of human memory

33

Copyright © Allyn and Bacon 2009

Memory's "Seven Sins"



34

Copyright © Allyn and Bacon 2009

Transience

The impermanence of a long-term memory; long-term memories gradually fade in strength over time

Relearning

Savings method

Forgetting curve



35

Copyright © Allyn and Bacon 2009

Forgetting Meaningful Information

Interference

One item prevents us from forming a robust memory for another item

- Proactive interference: old memory disrupts remembering new information
- Retroactive interference: new information prevents remembering old information

36

Copyright © Allyn and Bacon 2009

Forgetting Meaningful Information

Add image to illustrate Serial Position Curve

Serial Position Curve-

Ease of remembering is determined by position of the items in a series

- Primacy effect: relative ease of remembering first items
- Recency effect: relative ease of remembering last items or more recent items

37

Copyright © Allyn and Bacon 2009

Absent-Mindedness

Forgetting caused by shifting attention elsewhere

e.g., change blindness



38

Copyright © Allyn and Bacon 2009

Blocking

Forgetting that occurs when an item in memory cannot be accessed or retrieved

e.g., Tip-of-the-tongue



39

Copyright © Allyn and Bacon 2009

Misattribution

Memory fault that occurs when memories are retrieved, but they are associated with the wrong time, place, or person



40

Copyright © Allyn and Bacon 2009

Suggestibility

Process of memory distortion as a result of deliberate or inadvertent suggestion
Misinformation effect
Fabricated memories



41

Copyright © Allyn and Bacon 2009

Factors Affecting the Accuracy of Eyewitnesses:

- Leading questions
- Passage of time
- Age of the witness
- Confidence

42

Copyright © Allyn and Bacon 2009

Bias

An attitude, belief, emotion, or experience that distorts memories

Expectancy bias

Self-consistency bias



43

Copyright © Allyn and Bacon 2009

Persistence

Memory problem in which unwanted memories cannot be put out of mind



44

Copyright © Allyn and Bacon 2009

Improving Memory with Mnemonics

Mnemonics –

Techniques for improving memory, especially by making connections between new material and information already in long-term memory

Mnemonic strategies include:

Method of loci

Natural language mediators

45

Copyright © Allyn and Bacon 2009
